

Approved For Release 2001/03/06 : CIA-RDP86-00800R000100220024-8

NESTED RHOMBIC INSTALLATION



STATINTL

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DIVISION I - GENERAL REQUIREMENTS

SECTION 1A

SPECIAL PROVISIONS

1. GENERAL INTENTION: It is the declared and acknowledged intention and meaning to provide a complete installation of a GFE Nested Rhombic Antenna System.

2. GENERAL DESCRIPTION: The work includes the installation of a complete GFE Nested Rhombic Antenna System. More specifically, the work includes the furnishing of all labor, equipment, and material required to install concrete foundations, erection of a GFE nested rhombic antenna, installation of a dual run of approximately 2,600 feet each GFE buried co-axial cable, installation of GFE co-axial end fittings to cable terminations and connection of cable to existing compressed air system inside building.

STATINTL 3. LOCATION: The work shall be located at the U.S.

[REDACTED]
location will be indicated by the Contracting Officer.

4. FORM OF CONTRACT: This contract will be executed on Standard Form 23, January 1961 edition, Construction Contract, and will include Standard Form 23A, October 1969 edition, General Provisions; and additions to General Provisions; Standard Form 19A, Nov. 1969 edition, Labor and Standards Provisions.

5. PERFORMANCE AND PAYMENT BONDS, executed on Standard Forms 25, June 1967 edition, and 25A, June 1964 edition, respectively, will be required.

6. COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK: The Contractor will be required to commence work under this contract within 15 calendar days after the date of receipt by him of Notice to Proceed, to prosecute said work diligently, and to complete the entire work ready for use not later than 90 calendar days after receipt by him of Notice to Proceed. The time stated for completion shall include final cleanup of the premises.

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7. LIQUIDATED DAMAGES: In case of failure on the part of the Contractor to complete the work within the time fixed in the contract or any extensions thereof, the Contractor shall pay to the Government as liquidated damages, pursuant to the clause of this contract entitled "Terminations for Default - Damages for Delay - Time Extensions," the sum of \$25.00 for each calendar day of delay.

8. PERFORMANCE OF WORK BY CONTRACTOR: The contractor shall perform on the site, and with his own organization, work equivalent to at least twenty percent (20%) of the total amount of work to be performed under the contract. If, during the progress of the work hereunder, the Contractor requests a reduction in such percentage; and the Contracting Officer determines that it would be to the Government's advantage, the percentage of work required to be performed by the Contractor may be reduced; provided, written approval of such reduction is obtained by the Contractor from the Contracting Officer.

9. SHOP DRAWINGS: The Contractor shall submit to the Contracting Officer for approval five copies of all shop drawings as called for under the various heading of these specifications. These drawings shall be complete and detailed. If approved by the Contracting Officer each copy of the drawings will be identified as having received such approval by being so stamped and dated. The Contractor shall make any corrections required by the Contracting Officer. If the Contractor considers any correction indicated on the drawings to constitute a change to the contract drawings or specifications, notice as required under the clause entitled "Changes" will be given to the Contracting Officer. Four sets of all shop drawings will be retained by the Contracting Officer and one set will be returned to the Contractor. The approval of the drawings by the Contracting Officer shall not be construed as a complete check, but will indicate only that the general method of construction and detailing is satisfactory. Approval of such drawings will not relieve the Contractor of the responsibility for any error which may exist as the Contractor shall be responsible for dimensions and design of adequate connections, details, and satisfactory construction of all work.

9.1 Upon the completion of the work under this contract, the Contractor shall furnish two complete sets of prints of all shop drawings as finally approved. These drawings will show changes and revisions made up to the time the equipment is completed and accepted.

10. CERTIFICATES OF COMPLIANCE: Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in quintuplicate. Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet specifications.

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SPECIFICATION NO. [REDACTED]

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11. CONTRACT DRAWINGS AND SPECIFICATIONS:

11.1 Five sets of full-size contract drawings and five copies of specifications will be furnished the Contractor without charge except applicable publications incorporated into the Technical Provisions by reference. The work shall conform to the following contract drawings, all of which form a part of these specifications and are available [REDACTED]

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<u>DRAWING NUMBER</u>	<u>TITLE</u>	<u>SHEET NUMBER</u>
7003-77-100	Cover Sheet	1 of 9
7003-77-101	Antenna Location	2 of 9
7003-77-102	Antenna Layout and Details	3 of 9
7003-77-103	Guy Anchorage and Tower Base Details	4 of 9
7003-77-104	Erection Assembly - 1678 (3) Wire Rhombic Tower With Non-Hinged Base	5 of 9
7003-77-105	Erection Assembly - 2400 (3) Wire Rhombic Tower With Non-Hinged Base	6 of 9
7003-77-106	Erection Diagram HAT 1678 Rhombic Antenna Support	7 of 9
7003-77-107	Erection Diagram HAT 2400 Rhombic Antenna Support	8 of 9
7003-77-108	Co-axial Cable Termination	9 of 9

11.2 Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work but they shall be performed as if fully and correctly set forth and described in the drawings and specifications.

11.3 The Contractor shall check all drawings furnished him immediately upon their receipt and shall promptly notify the Contracting Officer of any discrepancies. Figures marked on drawings shall in general be followed in preference to scale measurements. Large scale drawings shall in general govern small scale drawings. The Contractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been made at the site.

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12. **AS-BUILT CONDITIONS:** The Contractor will be furnished with two extra sets of drawings, which he will maintain by marking in red on both sets all changes to contract drawings which occur during construction. In the event such changes are described by supplementary drawings, a copy of such drawings shall be made a part of each "as-built" set. Appropriate comments shall be made on applicable contract drawings, referring to the supplementary drawings. Upon completion of the contract, both sets shall be delivered to the Contracting Officer prior to the submission of the final invoice.

13. **COORDINATION OF MATERIALS:** The Contractor shall be responsible for coordination of optional construction materials, as finally approved by the Contracting Officer with structural design criteria, dimensions, clearances, modification of supporting and adjoining construction and all other changes required because of the use of optional material.

14. **PHYSICAL DATA:** Information and data furnished or referred to below are furnished for the Contractor's information. However, it is expressly understood that the Government will not be responsible for any interpretation or conclusion drawn therefrom by the Contractor.

14.1 The physical conditions indicated on the drawings and in the specifications are the result of site investigations by surveys, which are shown on the drawings.

14.2 Weather Conditions: Complete weather records and reports may be obtained from the U. S. Weather Bureau. The Contractor shall satisfy himself as to the hazards likely to arise from weather conditions during the construction period.

14.3 Transportation Facilities: Paved highways serve the area adjacent to the site of the work. The Contractor shall make his own investigation of the condition of available public and post roads and of clearances, restrictions, and other limitations affecting transportation and ingress and egress at the site of the work.

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15. IDENTIFICATION OF EMPLOYEES: The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work to display such identification as may be approved and directed by the Contracting Officer. All prescribed identification shall immediately be delivered to the Contracting Officer, for cancellation upon the release of any employee. When required by the Contracting Officer the Contractor shall obtain and submit fingerprints of all persons employed or to be employed on the project.

16. REQUIRED INSURANCE: The Contractor shall procure and maintain during the entire period of his performance under this contract the following minimum insurance:

TYPE	AMOUNT
Comprehensive General	\$100,000 per person
Liability (Bodily Injury or Death)	\$300,000 per accident
Motor Vehicle Liability (for each motor vehicle)	\$ 50,000 per person
Bodily Injury or Death	\$100,000 per accident
Property Damage	\$ 5,000 per accident

16.1 Prior to the commencement of work hereunder, the Contractor shall furnish the Contracting Officer a certificate or written statement of the above required insurance. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation or any material change in the policies adversely affecting the interests of the Government in such insurance shall not be effective until 30 days after written notice thereof to the Contracting Officer.

16.2 The Contractor agrees to insert the substance of this clause, including this paragraph 16.2, in all subcontracts hereunder.

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In accordance with the contract provisions, the Contractor shall, within ten (10) days or as otherwise determined by the Contracting Officer, submit for approval a practicable progress schedule. The progress schedule shall be in the form of a chart graphically indicating the sequence proposed to accomplish each work feature or operation. The chart shall be prepared to show the starting and completion dates of all work features on a linear horizontal time scale beginning with date of Notice to Proceed and indicating calendar days to completion. Each activity in the construction shall be represented by an arrow. The head to tail arrangement of arrows shall flow from left to right. Each arrow representing an activity shall be annotated to show the activity description and duration. Contractor shall indicate on the chart the important work features or operations that are critical to the timely overall completion of the project. Key dates for such important work features and portions of work features are milestone dates and shall be so indicated on the chart. This schedule will be the medium through which the timeliness of the Contractor's construction effort is appraised. When changes are authorized that result in contract time extensions, Contractor shall submit a modified chart for approval by the Contracting Officer. The provision of the General Provisions with reference to overtime, extra shifts, etc., may be invoked when the Contractor fails to start or complete work features or portions of same by the time indicated by the milestone dates on the approved progress chart, or when it is apparent to the Contracting Officer from the Contractor's actual progress that these dates will not be met. Neither on this chart nor on the periodic charts which the Contractor is required to prepare and submit, as described in the General Provisions, shall the actual progress to be entered include or reflect any materials which may be on the site, but are not yet installed or incorporated in the work. For payment purposes only, an allowance will be made by the Contracting Officer of 90 per cent of the invoiced cost of materials or equipment delivered to the site, but not incorporated into the construction, pursuant to the General Provisions, Payments to Contractor.

18. **CONTRACTOR SUBMITTAL PROCEDURES (SHOP DRAWINGS AND MATERIALS):** The Contractor shall submit to the Contracting Officer, concurrently with the submission of the progress chart, a schedule in five copies listing all items that he will submit to

the Contracting Officer for approval as required by the contract. The schedule shall include among other things shop drawings, manufacturers' literature, certificates of compliance, material samples and guarantees. The Contractor shall coordinate the preparation of this schedule with his progress chart to insure that the scheduled dates for submittal of the various items for approval are sufficiently early so as not to delay procurement for any item. The Contractor shall allow a minimum of 30 days for review and approval action by the Contracting Officer not including delays for any resubmissions required. The schedule shall show each item, the contract requirement for the submittal, the date the Contractor intends to submit the item, the date the Contractor expects to receive approval and the date he expects delivery of the item to the job site. Furnishing of the schedule shall not be interpreted as relieving the Contractor of his obligation to comply with all the specification requirements for the items on the schedule. The Contractor shall revise and update the schedule as appropriate and furnish five copies to the Contracting Officer for monitoring. Payment for materials incorporated into the work will not be allowed if required approvals have not been obtained.

19. WARRANTY OF CONSTRUCTION:

19.1 In addition to any other warranties set out elsewhere in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect of equipment, material or design furnished, or workmanship performed by the Contractor or any of his subcontractors or suppliers at any tier. Such warranty shall continue for a period of one year from the date of final acceptance of the work, but with respect to any part of the work which the Government takes possession of prior to final acceptance, such warranty shall continue for a period of one year from the date the Government takes possession. Under this warranty, the Contractor shall remedy at his own expense any damage to Government owned or controlled real or personal property, when that damage is the result of the Contractor's failure to conform to contract requirements or any such defect of equipment, material, workmanship, or design. The Contractor shall also restore any work damaged in fulfilling the terms of this clause. The Contractor's warranty with respect to work repaired or replaced hereunder will run for one year from the date of such repair or replacement.

19.2 The Government shall notify the Contractor in writing within a reasonable time after the discovery of any failure, defect, or damage.

19.3 Should the Contractor fail to remedy any failure, defect, or damage, described in (19.1) above within a reasonable time after receipt of notice thereof, the Government shall have the right to replace, repair, or otherwise remedy such failure, defect, or damage at the Contractor's expense.

19.4 In addition to the other rights and remedies provided by this clause, all subcontractors', manufacturers', and suppliers' warranties expressed or implied, respecting any work materials shall, at the direction of the Government, be enforced by the Contractor for the benefit of the Government. In such case if the Contractor's warranty under (19.1) above has expired, any suit directed by the Government to enforce a subcontractor's, manufacturer's or supplier's warranty shall be at the expense of the Government. The Contractor shall obtain any warranties which the subcontractors, manufacturers, or suppliers would give in normal commercial practice.

19.5 If directed by the Contracting Officer, the Contractor shall require any such warranties to be executed in writing to the Government.

19.6 Notwithstanding any other provision of this clause, unless such a defect is caused by the negligence of the Contractor or his subcontractors or suppliers at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government for the repair of any damage which results from any such defect in Government furnished material or design.

19.7 The warranty specified herein shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistake, or fraud.

20.1 The work will be under the general direction of the Contracting Officer, who shall designate a Project Engineer, or other representative of the Government, who except in connection with the Disputes Clause shall be the authorized representative of the Contracting Officer and under direction of the Contracting Officer have complete charge of the work, and shall exercise full supervision and general direction of the work, so far as it affects the interest of the Government.

20.2 The provisions in this clause or elsewhere in this contract regarding supervision, approval or direction by the Contracting Officer or the Project Engineer or action taken pursuant thereto are not intended to and shall not relieve the Contractor of responsibility for the accomplishment of the work either as regards sufficiency or the time of performance, except as expressly otherwise provided herein.

21. AVAILABILITY OF UTILITY SERVICE: All reasonable required amounts of water, electricity, etc., will be made available to the Contractor by the Government from existing system outlets and supplies without cost to the Contractor. All temporary lines will be furnished, installed, connected, and maintained by the Contractor in a workmanlike manner satisfactory to the Contracting Officer and shall be removed by the Contractor in like manner at his expense prior to final acceptance of the construction. Power for electric welders is not available.

22. LAYOUT OF WORK: The Contractor shall layout his work as indicated on the drawings or in accordance with approved shop drawings, and shall be responsible for all measurements in connection therewith. The Contractor shall furnish, at his own expense, all stakes, equipment, tools and materials and labor as may be required in laying out any part of the work. The Contractor will be held responsible for the execution of the work to such lines and grades as may be established or indicated by the Contracting Officer.

23. **SECURITY REQUIREMENTS:** The buildings and/or site wherein services are to be provided under this contract are under strict security control. The Contractor agrees on behalf of himself and all subcontractors that he will assign only U. S. citizens to perform any services required under the terms of this contract. Any person granted access to the facilities of this Government installation in connection with performance of this contract shall be subject to the Espionage or other Federal laws relating to improper disclosure of classified information. If required, any personnel who shall perform under the terms of this contract may be subject to a security check and approval prior to the beginning of any services. The Contractor agrees to furnish to the Contracting Officer, as is necessary, biographic data and other information as may be required for all such personnel and will cooperate in all security matters which may arise relating to this contract.

23.1 **Publicity:** The Contractor shall avoid all unnecessary publicity in connection with this project, and shall in no case publish or knowingly permit to be published any plan, specification, textural description, or other information related to the project without written approval of the Contracting Officer.

23.2 **Access to the Site:** Before any employees of the Contractor or his subcontractor shall be permitted access to the site, the Contractor shall furnish to the Contracting Officer for his approval a complete list in duplicate of the full names, permanent addresses, and place of birth of the employees who will have access to the site. Said employees shall be U. S. citizens. [REDACTED]

[REDACTED] Security Forms shall be filled out and submitted by the Contractor for each employee for whom access is requested. Blank forms will be provided by the Contracting Officer. A copy of the form is bound with this Section of the Specification for the Contractor's information.

24. **FIRE, SAFETY, AND SANITARY REGULATIONS:** The Contractor shall familiarize himself with the fire, safety, and sanitary regulations of this installation. These regulations will be fully complied with at all times, and any workman not complying therewith shall be subject to dismissal.

24.1 Head Protection: The entire work area under this contract is designed as a hard hat area. The Contractor shall post the area as per paragraph 07.C.04, EM 385-1-1 and shall insure that all Contractor personnel, vendors, and visitors utilize hard hats within the project area.

24.2 Latrine Facilities: The Contractor shall provide latrines for the use of his employees at such locations as designated by the Contracting Officer.

25. EXISTING CONDITIONS AND EXTRA OBLIGATIONS OF THE CONTRACTOR: The Contractor will be working around existing buildings which are occupied. The Contractor and his employees will not be allowed in some areas of the existing buildings without prior approval of the Contracting Officer. Proper measures shall be taken to insure maximum safety and protection for personnel and property. The Contractor shall use the site designated by the Contracting Officer for storage of materials. Regular working hours of job construction work are between the hours of 8:00 a.m. and 4:30 p.m. local time, daily, Monday through Friday, inclusive, legal holidays excepted.

25.1 Outages: Interference with the station utilities (electrical, gas, sanitary sewers, telephone, fire alarm and signal systems) shall be the minimum sum of work shall be scheduled until all necessary material for the work involved during the outage is actually on the site and three (3) days advance notice given. Work which necessitates an outage of long duration shall be performed on Saturday, Sunday, or after the normal working day.

25.2 Storm Protection: Should warnings of winds of gale force or stronger be issued, the Contractor shall take every practicable precaution to minimize danger to persons, to the work, and to adjacent property. These precautions shall include closing all openings; removing all loose material, tools and/or equipment from exposed locations; and removing or securing scaffolding and other temporary work.

25.3 Clean-up: The Contractor shall at all times keep the premises free from accumulation of waste materials and other debris caused by his work. Upon completion of his work, the Contractor shall remove all his tools and surplus materials from the premises and shall leave the job and surrounding area "broom-clean." The Government trash containers shall not be used by the Contractor for removal of debris.

26. SCHEDULE OF PRICES: Upon receipt of a notice of award, the Contractor shall prepare a detailed breakdown of the contract price giving the quantities of the various kinds of work and the unit and total prices therefor. The submission of this breakdown will not affect the contract terms.

27. RELEASE: The Contractor and each assignee under an assignment in effect at the time of final payment shall execute and deliver at the time of and as a condition precedent to final payment, a release in form and substance satisfactory to and containing such exceptions as may be found appropriate by the Contracting Officer, discharging the Government, its officers, agents, and employees of and from liabilities, obligations and claims arising under this contract.

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SPECIFICATION NO. [REDACTED]

28. MINIMUM WAGE RATES AND OTHER LABOR STANDARDS: The Contractor shall pay mechanics and laborers employed or working directly upon the site of the work, wage rates not less than those contained in the attached wage determination decision of the Secretary of Labor No. 77-VA-451 dated 6/22/77.

29. SITE VISIT: Arrangements for an inspection of the site may be made by contacting the Office of the [REDACTED]

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[REDACTED]
Bidders are urged and expected to inspect the site where services are to be performed and to satisfy themselves as to all general and local conditions that may affect the cost of performance of the contract, to the extent such information is reasonably obtainable. In no event will a failure to inspect the site constitute grounds for withdrawal of a bid after opening or for a claim after award of contract.

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30-VA.1.B

BUILDING CONSTRUCTION

Air Conditioning Mechanics
 Bricklayers
 Carpenters
 Carpet Mechanics
 Dry Wall Hangers
 Electricians
 Glaziers
 Ironworkers
 Laborers
 Painters, Brush
 Plumbers and Steamfitters
 Roofers
 Sheet Metal Workers
 Truck Drivers
 Power Equipment Operators:
 Backhoe
 Crane
 Front End Loader
 Grader

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
\$6.25	.30	1%		3/4%
8.75				
6.19				
6.10				
6.00				
8.00				
6.875				
5.50				
4.20				
7.00				
5.75				
6.50				
5.80				
5.00				
6.00				
5.75				
5.75				
5.75				

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TO :

STATINTL

STATINTL

SUBJECT: Request for Access

The following data is furnished for your information. It is requested that the undersigned be allowed access for official business.

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Full Name _____
(Last) (First) (Middle) Social Security #

Date of Birth: _____ Place of Birth: _____
City - State - County

Citizenship: _____ Male () Female () Height: _____

Weight: _____ Color of Hair: _____ Color of Eyes: _____

Current Address: _____ Since: _____

Previous Address: _____
Dates

From: _____
To: _____

Previous Address: _____
From: _____
To: _____

Military Service: _____ Branch of Service: _____
Years: _____ Serial #: _____
From To

Present Employer: _____
City: _____ State: _____ Zip: _____

Job Title: _____ Supervisor's Name: _____
Name & Location of last three employers and Dates of Employment:

Dates: _____

Dates: _____

Dates: _____

Date: _____ Signature: _____

DIVISION II - TECHNICAL PROVISIONS

SECTION 1

GENERAL WORK REQUIREMENTS

1. GENERAL SCOPE OF WORK: The work to be performed by the Contractor is the installation of a GFE Nested Rhombic Transmitter Antenna System [REDACTED]

More specifically the work consist of the installation of concrete foundations, erection of a GFE nested rhombic antenna, and the installation of GFE co-axial cable, installation of GFE co-axial end fittings, connection of existing compressed air system, to new co-axial end fittings, ready for testing and operations by others.

1.1 Buried co-axial cable, 1-5/8" in diameter, is to be installed from the Transmitter Building to the newly constructed antenna. This cable must be bedded in a 12" deep layer of sand for proper cushioning and protection. The minimum depth of burial is 24", measured from top of existing ground to the top of the buried cable.

1.2 The Government will furnish to the Contractor one each Nested Rhombic Antenna System, complete to the best of the Government's knowledge, including components, guylines, anchor bolts and hardware, co-axial cable, and antenna wire. Notwithstanding the above, the Contractor shall furnish all special tools commonly used in the various construction trades, cement, aggregate, fill material, etc., and all equipment for installation of the antenna system.

1.3 The Government has erected a monumented true north line on the construction site; location of this mark is shown on drawing.

SPECIFICATION NO. [REDACTED]

SECTION 2

EARTHWORK

1. GENERAL: The work in this section includes furnishing all material, labor, and equipment and performing all work in connection with excavation, filling, backfilling, and spreading of surplus excavated material in accordance with these specifications and applicable drawings subject to the terms and conditions of this contract.

2.1 Excavation:

a. Limits: Excavation shall be carried to such depths as indicated on the drawings. Over excavation shall be backfilled with cohesionless material as approved by the Project Officer.

b. Classification: Excavation shall be considered as UNCLASSIFIED and shall include all materials encountered regardless of nature. The soil conditions may be generally described as to three or four feet of high plasticity index clay overlaying a strata of relatively impervious shale of undetermined thickness.

3. Trenching: Trenches for co-axial cable shall have a minimum depth of 30 inches beneath existing grade. Trenching may be accomplished by mechanical or manual means; however, it should be noted that the locations shown for existing underground co-axial and power lines are approximate and extreme caution should be exercised in all trenching and excavation.

3.1 Surplus Materials: All reusable surplus excavated materials shall be placed and spread on-site as directed by the Project Officer in the area of construction. Unusable excavated materials shall be disposed of off-site.

3.2 Backfill:

a. General: No backfilling operations shall commence until the work to be covered has been approved by a representative of the Project Officer.

b. Material: Backfill material shall consist of the material excavated or borrow material as approved by the Project Officer except that the first 12 inches of backfill in cable trenches shall be sand.

c. Compaction: Backfill for antenna mast footings and guy anchors shall be compacted to 90% of maximum dry density. Backfill for cable trenches shall be hand tamped and shall be mounded smoothly to a height of three inches above the surrounding grade.

3.3 Grading:

a. General: Where existing elevations do not fall within the recommended ground tolerances for the various masts, the Contractor will perform such grading as required to meet the specified limits.

b. Topsoil: Topsoil shall be stockpiled at the work site. After achieving a rough finished grade within the specified tolerances, the topsoil shall be spread evenly over the disturbed surface and rolled.

SPECIFICATION NO. [REDACTED]

SECTION 3
CONCRETE

1. GENERAL: The work in this section shall include furnishing all material, labor and equipment and performing all work in connection with concrete work in accordance with these specifications and applicable drawings subject to the terms of the contract.

1.1 Applicable Publications: Standards as set forth in the ACI Standard Building Code Requirements Concrete, ACI 318-71, shall be considered applicable to this contract except as otherwise specified herein.

1.2 Materials:

a. Aggregate: Coarse and fine aggregate shall conform to ASTM C33-74a, Concrete Aggregates. Maximum coarse aggregate size shall be 1-1/2".

b. Water: Water shall be clean and free from injurious amounts of oil, acid, alkali, organic matter and other deleterious substances.

c. Cement: Portland cement shall conform to Federal Specification SS-C-192g, type I or II.

d. Forms: Forms shall be wood, plywood, or metal and shall be of the type and condition to provide a smooth finish.

e. Admixtures: Concrete admixtures will not be permitted.

1.3 Sampling and Testing:

a. Samples: Samples of all materials to be used will be submitted to the Contracting Officer prior to incorporation in the work.

b. Tests: The Contractor shall take one set of three concrete cylinders for test purposes from each days pour of concrete. It shall be the Contractor's responsibility to assure that the cylinders are made and cured in accordance with applicable ASTM standards. The Contractor shall submit the samples to an approved testing laboratory for breaking and provide the Project Officer with a certification of the results thereof. If the average strength of the cylinders falls below the minimum specified, at the request of the Project Officer, all of the concrete poured during the day the cylinders were taken shall be removed and repoured.

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SPECIFICATION NO. [REDACTED]

1.4 Design Strength, Measuring, Mixing and Placing:

a. Design Strength: All concrete shall have a minimum 30 day compressive strength of 2,500 pounds per square inch.

b. Measuring: The water content of concrete shall not exceed 7 U.S. gallons per 94lb. sack of cement. Proportions shall be determined by the trial batch method.

c. Mixing: Concrete may be ready mixed or mixed in an approved batch mixer in accordance with ACI standards.

d. Placing: The Project Officer shall be notified 24 hours prior to placing of any concrete. Forms and prepared subgrades shall be moistened but free of standing water or debris prior to placing concrete.

1.5 Finishing: Exposed concrete surfaces shall be floated to a smooth finish free of laitance or standing water. Steel trowelling is not required.

1.6 Curing and Stripping of Forms:

a. Curing: Exposed surfaces of concrete shall be cured as recommended in the ACI code for 7 days after pouring. Concrete may be moist cured, covered with waterproof paper or treated with a membrane forming compound at the Contractor's option. The curing method and materials selected shall be approved by the Project Officer prior to pouring. Forms shall remain in place for 7 days after pouring.

SPECIFICATION NO. [REDACTED]

SECTION 4

ANTENNA ERECTION

1. SCOPE: The work in this section shall include furnishing all material (except GFE), labor, and equipment (except GFE) and performing all work in connection with the assembly and erection of antennas in accordance with these specifications and applicable drawings subject to the terms of the contract.

1.1 Applicable Publications: The following publication forms a part of this contract subject to the terms and conditions of the specifications and drawings:

a. General Instructions For Installation And Assembly Of Standard Penn-Tech Towers Insulated and Non-Insulated.

2. GENERAL: The antenna shown on the drawings shall be erected in accordance with the above instruction manual for this general type antenna and in accordance with the contract drawings. Where discrepancies occur between the instruction manual and these specifications or contract drawings, the Project Officer should be notified prior to pursuing the work.

3. Erection of Nested Rhombic Antenna:

a. General: The nested rhombic antenna is comprised of an inner (3) wire rhombic system approximately 70 feet high and an outer (3) wire rhombic system nominally 160 feet high as shown on the drawings. The masts for the inner system are HAT Type 1678 Penn-Tech and are to be erected in accordance with the drawings. The masts for the outer system are HAT Type 2400 Penn-Tech Towers and are to be erected in accordance with the drawings. General instructions for installation and assembly are available at the [REDACTED] Engineer's Office.

b. Guy Wire: Back guy wires for the Type 2400 masts are non-insulated. All other guys are insulated at 20 foot intervals.

c. Guy Anchors: Guy anchors are to be concrete and with dimensions as shown.

d. Ground Elevations: Ground elevations may vary to a maximum of five feet within the perimeter of the nested rhombics. Where grading is required to meet the elevation limitation, it shall be performed in accordance with section entitled "EARTHWORK".

SPECIFICATION NO. [REDACTED]

STATINTL

e. Transmission Lines: Transmission lines shall be direct burial co-axial cable.

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STATINTL

SPECIFICATION NO. [REDACTED]

SECTION 5

UNDERGROUND CABLE

1. SCOPE: The work in this section shall include furnishing all labor, equipment and performing all work in connection with laying of underground co-axial cable in accordance with these specifications and applicable drawings subject to the terms of the contract.

2. MATERIAL: All cable and fittings will be furnished by the Government for installation by the Contractor.

3. INSTALLATION: The new antenna is to have direct burial co-axial cable as transmission line. Cable will be run in a common trench generally as shown in the drawings and described in the section entitled, EARTHWORK. Installation techniques shall conform to recommended procedures in the installation manual. Cable shall have a six inch sand bedding over the natural earth at the bottom of the trench and a six inch sand cover between the top of the cable and fill dirt. A three inch lateral layer of sand is to be placed between the cable and the side of the trench. Where multiple cable runs occur in one trench, cables shall have a minimum of one inch lateral clearance.

4. TERMINATION: Cable shall be terminated inside Building C-1 as shown on the drawings. The Contractor shall prepare cable ends and install co-axial cable end fittings (to be supplied by the Government) for connection to existing multi-coupler units. The Contractor shall also install Government supplied pneumatic manifold and flexible piping as shown.

SPECIFICATION NO. [REDACTED]

SECTION 6

BALUN AND RESISTOR INSTALLATION

1. SCOPE: The work in this section shall include furnishing all material, labor, and equipment and performing all work in connection with the erection of baluns and resistors in accordance with these specifications and applicable drawings subject to the terms of the contract.

1.1 Applicable Publications: Standards as set forth in the AT&T Specification for Wood Poles and Crossarms, AT-7312, shall be considered applicable for wood poles and crossarms used in this contract, except as otherwise specified herein. Standards as set forth in Federal Specifications RR-F-163 shall be considered applicable for metal poles and clamps used in this contract, except as otherwise specified herein. Standards as set in Edison Electric Institute (EEI) specification TDJ-1, TD-4, TDJ-10, and TD-11 shall be considered applicable for pole-line hardware used in this contract, except as otherwise specified herein.

2. MATERIALS:

a. Metal Poles (Contractor furnished) and Clamps (Government furnished): Posts and clamps shall be galvanized and shall conform to Specification RR-F-163. Posts and clamps shall be of the sizes and shapes indicated on the drawings.

b. Wood Poles and Crossarms (Contractor furnished): Poles shall be butt treated Western Red Cedar or fully treated Southern Yellow Pine and shall conform to AT&T Specification, AT-7312. Crossarms shall be fully treated Southern Yellow Pine. All poles shall be Class 4 or 5.

c. Concrete: Concrete shall be Class A, using 1-1/2" maximum size aggregate and shall be as specified in section: "CONCRETE".

d. Pole-Line Hardware (Contractor furnished): Pole-line hardware includes bolts, nuts, washers, eyebolts, clevises, and wire connectors and shall conform to appropriate EEI Specification.

3. ERECTION: Baluns and terminating resistors shall be erected as shown on drawing.

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STATINTL

SPECIFICATION NO. [REDACTED]

SECTION 7

FINAL INSPECTION

1. SCOPE: The work in this section includes furnishing all material, labor, and equipment and performing all work in connection with inspection of the antenna system in accordance with these specifications and applicable drawings subject to the terms of the contract.

2. GENERAL: The Contractor shall provide at the site such technically qualified personnel as required to insure that the specifications and instruction manuals are followed during the erection phase.

3. INSPECTION: The Contractor shall provide to the Project Officer in writing, a copy of final tension values for all guys on the antenna system. Contractor shall insure a proper and safe installation and strictly adhere to the requirements as described in the "General Instructions for Installation and Assembly" and drawings regarding torquing requirements, tower plumbness and guy tensioning.

TP-10

SPECIFICATION NO. [REDACTED]

SECTION 8

CLEAN-UP

1. SCOPE: The work in this section shall include furnishing all material, labor, and equipment and performing all work in connection with restoring the site of the work to its original condition in accordance with these specifications and applicable drawings subject to the terms of the contract.

2. GRADING: Where the existing grades at the site have been disturbed by the construction work, they shall be regraded and smoothed to original conditions. Where fill earth is required, it shall be approved by the Project Officer prior to use. Existing grass cover disturbed by the construction need not be reseeded. However, grading shall be accomplished to enhance the growth of natural ground cover.

3. SURPLUS MATERIAL: All surplus construction materials shall be removed from the site.